CLAIMS

1. A wireless communication apparatus for receiving a communication signal that frequency-hops among a plurality of frequency bands, the wireless communication apparatus comprising:

a frequency conversion unit for multiplying a received communication signal by a local signal composed of a hopping frequency so as to perform frequency conversion;

a high-pass filter unit that includes parallel-arranged capacitors corresponding to frequency-hopping bands and switches connections of capacitors in synchronization with frequency hopping; and

a reception processing unit for performing reception processing on a received signal that has passed through the high-pass filter unit

2. The wireless communication apparatus according to claim 1, wherein the communication signal is an ultra-wideband signal obtained by carrying transmission information over a wide frequency band.

3. The wireless communication apparatus according to claim 1, wherein the communication signal is an OFDM signal obtained by allocating a plurality of pieces of data to carriers, modulating amplitude and phase for each carrier, and transforming carriers into signals along a time domain while maintaining orthogonality

of each carrier along a frequency domain, and
wherein the reception processing unit performs OFDM demodulation.

4. The wireless communication apparatus according to claim 1, wherein the high-pass filter unit has a time difference at the time of switching connections of capacitors so as not to simultaneously connect two or more capacitors in parallel in synchronization with frequency hopping.

5. The wireless communication apparatus according to claim 1, wherein the high-pass filter unit has a parasitic-capacitance elimination unit for eliminating parasitic capacitance at the time of disconnecting each capacitor.